

WHAT IS CLAIMED IS:

1 1. A microarray comprising a support having a plurality of discrete
2 regions having a biopolymer spotted thereon, wherein attached to said biopolymer in each of
3 said regions is a ligand that can be the same or different from a ligand in any other of said
4 discrete regions, and wherein the concentration of said ligand in said discrete regions is
5 substantially normalized.

1 2. The microarray of claim 1, wherein said support is selected from the
2 group consisting of glass, polystyrene, PDVF membranes, nylon membranes, and
3 polycarbonate slides.

1 3. The microarray of claim 1, wherein said biopolymer is a member
2 selected from the group consisting of oligosaccharides, proteins, polyketides, peptoids,
3 hydrogels, polylactates and polyurethanes.

1 4. The microarray of claim 1, wherein said biopolymer is attached to said
2 support via noncovalent interactions.

1 5. The microarray of claim 4, wherein said noncovalent interactions are
2 selected from the group consisting of hydrogen bonding, van der Waals interactions,
3 hydrophobic interactions, hydrophilic interactions and combinations thereof.

1 6. The microarray of claim 1, wherein said biopolymer is attached to said
2 support via covalent interactions.

1 7. The microarray of claim 1, wherein said ligand is selected from the
2 group consisting of amino acids, peptides, proteins, sugars, lipids, nucleic acids, small
3 organic compounds, pharmaceutical agents, candidate pharmaceutical agents, natural or
4 synthetic antigens, and combinations thereof.

1 8. The microarray of claim 1, wherein said ligand is attached to said
2 biopolymer via chemoselective ligation.

1 9. The microarray of claim 1, wherein said biopolymer is agarose, and
2 said support is glass.

1 10. The microarray of claim 1, wherein said biopolymer is human serum
2 albumin, and said support is polystyrene.

1 11. The microarray of claim 1, wherein the difference in concentration
2 between any two discrete regions is less than 50%.

1 12. The microarray of claim 1, wherein the difference in concentration
2 between any two discrete regions is less than 20%.

1 13. The microarray of claim 1, wherein the difference in concentration
2 between any two discrete regions is less than 5%.

1 14. A method of producing a concentration-normalized ligand array, said
2 method comprising:

3 (a) forming a ligand-modified biopolymer by attaching a ligand to a
4 functionalized biopolymer via chemoselective ligation; and
5 (b) spotting an aliquot of said modified biopolymer mixture onto each of a
6 plurality of discrete regions on a solid support to produce a concentration-normalized ligand
7 array.

1 15. The method of claim 14, wherein said method further comprises, prior
2 to step (b), the following step:

3 (a)(i) combining said ligand-modified biopolymer with a biopolymer solution
4 to form a modified biopolymer mixture.

1 16. The method of claim 14, wherein said solid support is selected from
2 the group consisting of glass, polystyrene, PDVF membranes, nylon membranes, and
3 polycarbonate slides.

1 17. The method of claim 14, wherein said aliquot is spotted onto said solid
2 support under conditions sufficient to form a gel-coated surface.

1 18. The method of claim 14, wherein said biopolymer is a member
2 selected from the group consisting of oligosaccharides, proteins, polyketides, peptoids,
3 hydrogels, polylactates and polyurethanes.

1 19. The method of claim 14, wherein said ligand is selected from the group
2 consisting of amino acids, peptides, proteins, sugars, lipids, nucleic acids, small organic
3 compounds, pharmaceutical agents, candidate pharmaceutical agents and combinations
4 thereof.

1 20. The method of claim 14, wherein said ligand-modified biopolymer is
2 peptide-modified agarose and said solid support is glass.

1 21. The method of claim 14, wherein said ligand-modified biopolymer is
2 peptide-modified human serum albumin and said solid support is polystyrene.

1 22. A method for promoting cell or tissue growth at a desired site, said
2 method comprising contacting said site with a ligand-modified biopolymer in an amount
3 effective to promote cellular chemotaxis and cell or tissue growth at said site, wherein said
4 biopolymer component is a member selected from the group consisting of agarose, polylysine
5 and polyacrylamide, wherein said ligand component is a chemotactic peptide specific for a
6 cell surface receptor, and wherein said ligand component is attached to said biopolymer
7 component via chemoselective ligation.

1 23. The method of claim 22, wherein said biopolymer is agarose.

1 24. The method of claim 22, wherein said site is a member selected from
2 the group consisting of a stent, a graft, an organ, a tissue and an implant.

1 25. The method of claim 22, wherein said cell or tissue growth occurs
2 *in vivo*.

1 26. The method of claim 22, wherein said cell or tissue growth occurs
2 *in vitro*.

1 27. A method for assaying the binding of ligands to a binding partner, said
2 method comprising

3 (a) contacting a binding partner with a microarray of claim 1; and

4 (b) determining the amount of binding that occurs between said binding
5 partner and the ligands present in the discrete regions of said microarray.

1 **28.** The method of claim **27**, wherein said microarray comprises a
2 modified agarose biopolymer.